

<b>Interview Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/801,699	AMAKO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Louis K. Huynh	3721	

All participants (applicant, applicant's representative, PTO personnel):

(1) Louis K. Huynh. (3) \_\_\_\_\_.

(2) Mr. John Fitzpatrick. (4) \_\_\_\_\_.

Date of Interview: 15 October 2003.

Type: a) ☒ Telephonic b) ☐ Video Conference  
c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.  
If Yes, brief description: \_\_\_\_\_.

Claim(s) discussed: 22.

Identification of prior art discussed: None.

Agreement with respect to the claims f) ☐ was reached. g) ☒ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Applicant is informed that the present application is in condition for allowance except for the present of non-elected claim 22 which is drawn to an article. However, applicant's attorney did not agree to cancel the non-elected claim 22.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

\_\_\_\_\_  
Examiner's signature, if required

# Interview Summary

Application No.

69/801,699

Applicant(s)

AMAKO ETAL.

Examiner

Louis K. Huynh

Art Unit

3721

All participants (applicant, applicant's representative, PTO personnel):

(1) Louis K. Huynh.(3) Mr. JOHN FITZPATRICK(2) JOHN SIPOS

(4) \_\_\_\_\_

Date of Interview: \_\_\_\_\_

Type: a) ☐ Telephonic b) ☐ Video Conferencec) ☒ Personal [copy given to: 1) ☐ applicant 2) ☒ applicant's representative]Exhibit shown or demonstration conducted: d) ☒ Yes e) ☐ No.If Yes, brief description: ATTACHED AMENDMENT TO BE SUMMITTED

Claim(s) discussed: \_\_\_\_\_

Identification of prior art discussed: \_\_\_\_\_

Agreement with respect to the claims f) ☐ was reached. g) ☐ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments:

Amendment will emphasize the transparent material of the lid and the heating of the bonding member through the lid and not heating the lid.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

i) ☐ It is not necessary for applicant to provide a separate record of the substance of the interview (if box is checked).

Unless the paragraph above has been checked, THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

\_\_\_\_\_  
Examiner's signature, if required

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May 28, 2003

To: Examiner Louis K. Huynh  
Patent and Trademark Office

Fax: (703) 746-3251

From: James A. Oliff

Your Ref.: 09/801,699

Our Ref.: 108850

Number of Pages Sent (Including cover sheet): 11

Prepared By: Ldg

**Comments:**

Dear Examiner Huynh,

Further to our May 27 telephone conference, enclosed is a copy of the Amendment filed on May 12, 2003, for review prior to our June 3 personal interview. If you have any questions or comments, please contact us. Thank you.

John W. Fitzpatrick

Sent by: Ldg

This facsimile is intended only for the use of the individual or entity named above and may contain privileged or confidential information. If you are not the intended recipient, or the employee or agent responsible to deliver it to the intended recipient, you are notified that any review, dissemination, distribution or copying of this facsimile is prohibited. If you have received this facsimile in error, please immediately notify us by facsimile or telephone, and return the facsimile to us by mail at the above address.

PROPOSED AMENDMENT  
DO NOT ENTER  
JW 6/3/03

**PATENT APPLICATION**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Jun AMAKO et al.

Group Art Unit: 3721

Application No.: 09/801,699

Examiner: L. Huynh

Filed: March 9, 2001

Docket No.: 108850

For: PACKAGE SEALING METHOD, MANUFACTURING METHOD OF ELECTRONIC  
DEVICE MODULES, SEALING APPARATUS, AND PACKAGED PRODUCT

**AMENDMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In reply to the February 11, 2003 Office Action, the following is submitted:

**Amendments to the Claims** are reflected in the listing of claims; and

**Remarks.**

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**Amendments to the Claims:**

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A package sealing method comprising the following steps of:

providing a case which houses a product and has an opening surface, and a lid that covers the opening surface, which is made of a material that is transparent to a laser beam having a predetermined wavelength;

interposing a bonding member between a the case housing a product and a the lid made of a material that transmits a laser beam; and

irradiating the bonding member with a said laser beam through the lid so that the bonding member is melted to weld bond the case and the lid together to each other with intervention of the bonding member.

2. (Currently Amended) The package sealing method according to claim 1, wherein the step of interposing the bonding member is preparatively formed on the case or the lid, preparatory to the step of interposing a bonding member.

3. (Currently Amended) The package sealing method according to claim 1, wherein the case and the lid are fixed to each other by pressure, and thereafter, the bonding member is irradiated with the said laser beam.

4. (Canceled).

5. (Currently Amended) A package sealing method comprising the following steps of:

providing a case which houses a product and has an opening surface and a through hole provided in a wall of the case, and a lid that covers the opening surface, which is made of a material that is transparent to a laser beam having a predetermined wavelength;

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interposing a bonding member between the case and the lid;  
fixing the lid and the case to each other by vacuum suction using the through  
hole;  
irradiating the bonding member with said laser beam through the lid so that  
the bonding member is melted to bond the case and the lid to each other with intervention of  
the bonding member;

arranging a metal in the through hole;  
irradiating the metal with a laser beam so that the metal is melted to seal the  
through hole with the molten metal.~~The package sealing method according to claim 4, further~~  
~~comprising the steps of:~~

~~arranging a metal in the hole provided to the case, after welding the case and~~  
~~the lid together; and~~

~~irradiating the metal with a laser beam so that the metal is melted to seal the~~  
~~hole with the molten metal.~~

6. (Currently Amended) The package sealing method according to claim 5,  
wherein the laser beam for melting the bonding member and the laser beam for melting the  
metal have the same wavelength.~~The package sealing method according to claim 5, wherein~~  
~~one laser beam used for welding the case and the lid has the same wavelength as another laser~~  
~~beam for irradiating the metal arranged in the hole of the case.~~

7. (Currently Amended) The package sealing method according to claim 1,  
wherein the said laser beam is scanned, to irradiate the bonding member point by point so  
that the case and the lid are welded-bonded together.

8. (Currently Amended) The package sealing method according to claim 1,  
wherein the said laser beam is projected through a phase hologram to generate a diffraction

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light pattern, with which the bonding member is entirely irradiated at onea time-as-a-whole, so that the case and the lid are ~~welded~~ bonded together.

9. (Currently Amended) The package sealing method according to claim 8, wherein part of a light energy of said laser beam incident on the phase hologram is reserved in the zero-th order diffracted beam from the phase hologram, and the diffraction light pattern is positioned by using the zero-th order diffracted beam.

10. (Currently Amended) The package sealing method according to claim 8, wherein ~~the said~~ laser beam is converged by a condensing lens, the phase hologram is arranged between the condensing lens and the lid, and ~~further~~, a position of the phase hologram is ~~varied~~ controlled in an optical axis direction so ~~that as to obtain~~ the diffraction light pattern ~~can be obtained~~ at a desired location with desired dimensions.

11. (Currently Amended) The package sealing method according to claim 1, wherein a temperature distribution over ~~a welding~~ the bonded portion of the case and the lid is monitored during the laser irradiation of the bonding member.

12. (Currently Amended) The package sealing method according to claim 1, wherein the bonding member is preheated before being irradiated with the said laser beam.

13. (Currently Amended) An electronic device module manufacturing method for sealing a case housing an electronic device, with a lid, comprising the following steps of:

providing a case which houses an electronic device and has an opening surface, and a lid that covers the opening surface, which is made of a material that is transparent to a laser beam having a predetermined wavelength;

interposing a bonding member between the case and the lid; and

irradiating the bonding member with a said laser beam through the lid so that the bonding member is melted to weld bond the case and the lid together to each other with intervention of the bonding member.

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14. (Canceled).
15. (Canceled).
16. (Canceled).
17. (Canceled).
18. (Canceled).
19. (Canceled).
20. (Canceled).
21. (Canceled).
22. (Previously Amended) A packaged product manufactured by the method according to claim 1.



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**REMARKS**

Claims 1-3 and 5-22 are pending. By this Amendment, claims 1-3 and 5-13 are amended, and claims 4 and 14-21 are canceled. Claims 1-3 and 5-13 are presently under consideration. Applicants respectfully submit that claim 22 should be rejoined and allowed upon allowance of claim 1. No new matter has been added. Reconsideration in view of the above amendments and following remarks is respectfully requested. Applicants respectfully submit that all pending claims are in condition for allowance.

Applicants gratefully acknowledge that the Office Action indicates that claims 5-6 contain allowable subject matter.

**I. CLAIMS 1-13 SATISFY THE REQUIREMENTS OF  
35 U.S.C. §112, SECOND PARAGRAPH**

The Office Action rejects claims 1-13 under 35 U.S.C. §112, second paragraph. Claims 1-3 and 5-13 have been amended in conformity with 35 U.S.C. §112, second paragraph. Thus, withdrawal of this rejection is respectfully requested.

**II. THE CLAIMS DEFINE PATENTABLE SUBJECT MATTER**

A. The Office Action rejects claims 1-3, 7 and 11-12 under 35 U.S.C. §102(b) over U.S. Patent 5,772,817 to Yen et al. This rejection is respectfully traversed.

Yen fails to teach or suggest all of the features recited in independent claim 1. In particular, Yen fails to disclose a package sealing method including providing a case which houses a product and has an opening surface, and a lid for covering the opening surface, which is made of a material that is transparent to a laser beam having a predetermined wavelength, as recited in independent claim 1.

Instead, Yen relates to a method of assembling an optical pellicle including a pellicle frame 12 (made of metal, plastic, etc.) and a pellicle membrane 14 (made of polymer film) with intervention of an adhesive 19. See, e.g., the Abstract, Fig. 2 and col. 4, lines 8-41. The adhesive is irradiated with a CO<sub>2</sub> laser (having wavelength of 10.6  $\mu$ m) through the

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membrane to heat up the adhesive and membrane. See, e.g., col. 5, lines 40-50. The membrane made of polymer material absorbs infrared light of the laser, and the adhesive having the same polymeric structure as the membrane also absorbs the infrared light. Specifically, Yen discloses that the pellicle frame 12 and pellicle membrane 14 are bonded together by heating and melting the adhesive and membrane, respectively.

According to the claimed invention, a bonding member is laid on a case and is irradiated with a laser beam having predetermined a wavelength through a lid which is transparent to the laser beam. The bonding member which absorbs the laser beam is heated and melted to bond the case (made of ceramics) and lid, while the lid which does not absorb the laser beam is not heated and melted. Moreover, the lid transparent to the laser beam, having the predetermined wavelength, is used to efficiently increase energy utilization of the laser beam in heating the bonding member.

For at least the reasons discussed above, Applicants respectfully submit that Yen fails to anticipate the subject matter of independent claim 1. Accordingly, Yen also fails to anticipate the subject matter of claims 2-3 and 7-12, which depend from claim 1. Withdrawal of this rejection under 35 U.S.C. §102(b) is therefore respectfully solicited.

B. The Office Action rejects claims 1-3 and 13 under 35 U.S.C. §102(b) over U.S. Patent 5,263,888 to Ishihara et al. This rejection is respectfully traversed.

Ishihara fails to teach or suggest all the features recited in independent claims 1 and 13. In particular, Ishihara fails to disclose irradiating the bonding member with the laser beam through the lid so that the bonding member is melted to bond the case and the lid to each other with intervention of the bonding member, as recited in claims 1 and 13.

Instead, Ishihara discloses a method in which a pair of glass substrates 1a, 1b are bonded by a sealing member 3 (made of a photo setting resin) laid between the substrates, which is hardened by irradiation with an ultra-violet light. See, e.g., col. 4, lines 22-26 and

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Fig. 3a. Ishihara absolutely fails to teach, disclose or even suggest irradiating the bonding member with the laser beam as recited in independent claims 1 and 13.

For at least the reasons discussed above, Applicants respectfully submit that Ishihara fails to anticipate the subject matter of independent claims 1 and 13, and claims 2-3 which depend from independent claim 1. Thus, withdrawal of this rejection is respectfully solicited.

C. The Office Action rejects claims 1-3 and 13 under 35 U.S.C. §102(e) over U.S. Patent 6,420,649 to Kahl et al.; and rejects claim 4 under 35 U.S.C. §103(a) over Kahl in view of U.S. Patent 5,729,963 to Bird. These rejections are respectfully traversed.

Kahl fails to teach or suggest all of the features recited in independent claims 1 and 13. In particular, Kahl fails to teach or suggest that a bonding member is irradiated with a laser beam through a lid which is transparent to the laser beam, as recited in independent claim 1.

Instead, Kahl merely discloses a sealing compound 21 that is curable by heat or irradiation (UV, IR, X-ray or laser). See, e.g., col. 4, lines 57-67. However, Kahl absolutely fails to teach or suggest that the sealing compound is capable of being a bonding member which is irradiated with a laser beam through the transparent lid, as recited in the independent claims.

Bird fails to cure the deficiencies of Kahl discussed above with respect to independent claims 1 and 13.

For at least this reason, Applicants respectfully submit that neither Kahl nor Bird, alone or in combination, teach or suggest all the features recited in independent claims 1 and 13, and claims 2-4 which depend from independent claim 1. Withdrawal of these rejections is respectfully solicited.

D. The Office Action rejects claims 8-11 under 35 U.S.C. §103(a) over Yen in view of U.S. Patent 5,877,874 to Rosenberg. This rejection is respectfully traversed.

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As discussed above, Yen fails to teach or suggest all of the features of claim 1. Rosenberg also fails to cure the deficiencies of Yen discussed above with respect to independent claim 1.

Instead, Rosenberg is directed to a multiplexed hologram 10 (a kind of a diffraction optical element) which is a solar radiation collection device. A plurality of holograms which are different in spacing, and angle of fringes, are recorded in multiple in the multiplexed hologram. The plurality of holograms operate most effectively with solar radiation which is incidentally reflected on the holograms at different angles, so as to collect diffracted light into a specific direction. Moreover, the multiplexed hologram arrangement is designed to operate for incident light having a wide range of wavelength.

According to the claimed invention, a diffraction light pattern generates a hologram (a diffraction optical element) that is projected on a bonding member through a transparent lid. The shape of the diffraction light pattern can be arranged in accordance with the shape and size of a bonded portion. The structure of the hologram, according to claim 1, is designed to operate for incident light having a certain wavelength. Rosenberg fails to teach or suggest these features.

Accordingly, the Office Action has not established a prima facie case of obviousness, as the applied references failed to teach or suggest all of the subject matter of independent claim 1, and therefore claims 8-11. Withdrawal of the rejection under 35 U.S.C. §103(a) is therefore respectfully solicited.

### III. CONCLUSION

In view of the foregoing, Applicants respectfully submit that this application is in condition for allowance. Favorable consideration and prompt allowance are earnestly solicited.

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Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,

James A. Oliff  
Registration No. 27,075

Robert Z. Evora  
Registration No. 47,356

JAO:RZE/cfr

Date: May 12, 2003

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